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TANK CONFERENCE

Truck Trailer Manufacturers Association

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RSFA-04-19387-1

Richard P. Bowling
President

May 10, 2004

Edward Mazzullo, Director
Office of Hazardous Materials Standards DHM-10
Research & Special Programs Administration
U.S. Department of Transportation
400 Seventh Street S.W.
Washington, DC 20590

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OFFICE OF TRANSPORTATION

Dear Mr. Mazzullo;

TTMA is an international trade association comprised of truck trailer and tank trailer manufacturers, along with cargo container, cargo tanks for trucks and container chassis manufacturers. The associate membership represents material and component suppliers to the industry.

We request the consideration of the following metals as an addition to the 49 CFR 178.345-2 official language. The introduction of new or previously not authorized alloys would certainly benefit the industry when consideration is given to the fact that these alloys offer enhanced mechanical properties that when considered could allow the reduction of the minimum shell thickness to previous levels allowed under MC 306 specifications. Otherwise these enhanced properties could not be considered.

Aluminum Alloy 5186

A-242

A-588

A-606

Sincerely:

Jeff Sims

TTMA Engineering Manager

CC: Phil Olson

Enclosures



Standard Specification for High-Strength Low-Alloy Structural Steel¹

This standard is issued under the fixed designation A 242/A 242M; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

This standard has been approved for use by agencies of the Department of Defense. Consult the DoD Index of Specifications and Standards for the specific year of issue which has been adopted by the Department of Defense.

1. Scope

1.1 This specification covers high-strength low-alloy structural steel shapes, plates and bars for welded, riveted, or bolted construction intended primarily for use as structural members where savings in weight or added durability are important. The atmospheric corrosion resistance of the steel in most environments is substantially better than that of carbon structural steels with or without copper addition. When properly exposed to the atmosphere, this steel can be used bare (unpainted) for many applications (see Note 1). This specification is limited to material up to 4 in. [100 mm], inclusive, in thickness.

NOTE 1—For methods of estimating the atmospheric corrosion resistance of low-alloy steels, see Guide G 101.

1.2 When the steel is to be welded, it is presupposed that a welding procedure suitable for the grade of steel and intended use or service will be utilized.

1.3 The values stated in either inch-pound units or SI units are to be regarded as standard. Within the text, the SI units are shown in brackets. The values stated in each system are not exact equivalents; therefore, each system must be used independently of the other. Combining values from the two systems may result in nonconformance with the specification.

2. Referenced Documents

2.1 ASTM Standards:

A 6/A 6M Specification for General Requirements for Rolled Steel Plates, Shapes, Sheet Piling, and Bars for Structural Use²

G 101 Guide for Estimating the Atmospheric Corrosion Resistance of Low-Alloy Steels³

3. General Requirements for Delivery

3.1 Material furnished under this specification shall conform to the requirements of the current edition of Specification

A 6/A 6M, for the ordered material, unless a conflict exists in which case this specification shall prevail.

4. Process

4.1 The steel shall be made by one or more of the following processes: open-hearth, basic-oxygen, or electric-furnace.

4.2 Rimmed-type steels shall not be used.

5. Chemical Requirements

5.1 The heat analysis shall conform to the requirements prescribed in Table 1.

5.2 The steel shall conform on product analysis to the requirements prescribed in Table 1, subject to the product analysis tolerances in Specification A 6/A 6M.

5.3 Choice and use of alloying elements, combined with carbon, manganese, phosphorus, sulfur, and copper within the limits prescribed in 5.1 to give the mechanical properties prescribed in Section 6 and to provide the atmospheric corrosion resistance of 1.1, shall be made by the manufacturer and included and reported in the heat analysis to identify the type of steel applied. Elements commonly added include: chromium, nickel, silicon, vanadium, titanium, and zirconium.

5.4 When required, the manufacturer shall supply evidence of corrosion resistance satisfactory to the purchaser. The basis for this evidence may be a corrosion index calculated on the basis of the chemical composition of the steel, as described in Guide G 101.

NOTE 2—The user is cautioned that the Guide G 101 predictive equation for calculation of an atmospheric corrosion resistance index has only been verified for the composition limits stated in that guide.

6. Tensile Requirements

6.1 The material as represented by the test specimens shall conform to the requirements as to tensile properties prescribed in Table 2.

TABLE 1 Chemical Requirements (Heat Analysis)

Element	Composition, %	
	Type 1	
Carbon, max	0.15	
Manganese, max	1.00	
Phosphorus, max	0.15	
Sulfur, max	0.05	
Copper, min	0.20	

¹ This specification is under the jurisdiction of ASTM Committee A-1 on Steel, Stainless Steel and Related Alloys, and is the direct responsibility of Subcommittee A01.02 on Structural Steel for Bridges, Buildings, Rolling Stock, and Ships.

Current edition approved June 15, 1993. Published August 1993. Originally published as A 242 - 41 T. Last previous edition A 242/A 242M - 92.

² Annual Book of ASTM Standards, Vol 01.04.

³ Annual Book of ASTM Standards, Vol 03.02.

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TABLE 2 Tensile Requirements

	Plates and Bars ^a			Structural Shapes		
	For thick- nesses ¼ in. (20 mm), and under	For thick- nesses over ¼ to 1½ in. [20 to 40 mm], incl	For thick- nesses over 1½ to 4 in. [40 to 100 mm], incl	Groups 1 and 2	Group 3	Groups 4 and 5
Tensile strength, min, ksi [MPa]	70 [480]	67 [460]	63 [435]	70 [485]	67 [460]	63 [435]
Yield point, min, ksi [MPa]	50 [345]	46 [315]	42 [290]	50 [345]	46 [315]	42 [290]
Elongation in 8 in. [200 mm], min, %	18 ^{b,c}	18 ^{b,c}	18 ^{b,c}	18 ^c	18	18
Elongation in 2 in. [50 mm], min, %	21 ^c	21 ^c	21 ^c	21	21	21 ^d

^a See Specimen Orientation under the Tension Tests section of Specification A 6/A 6M.

^b Elongation not required to be determined for floor plates.

^c For plates wider than 24 in. [600 mm] the elongation requirement is reduced two percentage points. See elongation requirement adjustments in the Tension Tests section of Specification A 6/A 6M.

^d For wide flange shapes over 426 lb/ft [634 kg/m] elongation in 2 in. [50 mm] of 18 % minimum applies.

SUPPLEMENTARY REQUIREMENTS

Standardized supplementary requirements for use at the option of the purchaser are listed in Specification A 6/A 6M. Those that are considered suitable for use with this specification are listed by title:

S2. Product Analysis,
S3. Simulated Post-Weld Heat Treatment of Mechanical
Test Coupons,
S5. Charpy V-Notch Impact Test,

S6. Drop Weight Test,
S8. Ultrasonic Examination,
S14. Bend Test, and
S15. Reduction of Area Measurement.

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This standard is subject to revision at any time by the responsible technical committee and must be reviewed every five years and if not revised, either reapproved or withdrawn. Your comments are invited either for revision of this standard or for additional standards and should be addressed to ASTM Headquarters. Your comments will receive careful consideration at a meeting of the responsible technical committee, which you may attend. If you feel that your comments have not received a fair hearing you should make your views known to the ASTM Committee on Standards, 1916 Race St., Philadelphia, PA 19103.



Standard Specification for High-Strength Low-Alloy Structural Steel with 50 ksi [345 MPa] Minimum Yield Point to 4 in. [100 mm] Thick¹

This standard is issued under the fixed designation A 588/A 588M; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

This standard has been approved for use by agencies of the Department of Defense. Consult the DoD Index of Specifications and Standards for the specific year of issue which has been adopted by the Department of Defense.

1. Scope

1.1 This specification covers high-strength low-alloy structural steel shapes, plates, and bars for welded, riveted, or bolted construction but intended primarily for use in welded bridges and buildings where savings in weight or added durability are important. The atmospheric corrosion resistance of this steel in most environments is substantially better than that of carbon structural steels with or without copper addition (see Note 1). When properly exposed to the atmosphere, this steel can be used bare (unpainted) for many applications. This specification is limited to material up to 8 in. [200 mm] inclusive in thickness.

NOTE 1—For methods of estimating the atmospheric corrosion resistance of low-alloy steels, see Guide G 101.

1.2 When the steel is to be welded, it is presupposed that a welding procedure suitable for the grade of steel and intended use or service will be utilized.

1.3 Supplemental requirements are provided where improved internal quality and notch toughness are important. These shall apply only when specified by the purchaser on the order.

1.4 The purchaser should consider specifying supplemental requirements such as Charpy V-Notch Impact requirements when Group 4 or Group 5 wide flange shapes are specified for use other than column or compression application.

1.5 The values stated in either inch-pound units or SI units are to be regarded as standard. Within the text, the SI units are shown in brackets. The values stated in each system are not exact equivalents; therefore, each system must be used independently of the other. Combining values from the two systems may result in nonconformance with this specification.

¹ This specification is under the jurisdiction of ASTM Committee A-1 on Steel, Stainless Steel, and Related Alloys and is the direct responsibility of Subcommittee A01.02 on Structural Steel for Bridges, Buildings, Rolling Stock, and Ships.

Current edition approved June 15, 1993. Published August 1993. Originally published as A 588 - 68. Last previous edition A 588/A 588M - 92.

2. Referenced Documents

2.1 ASTM Standards:

A6/A 6M Specification for General Requirements for Rolled Steel Plates, Shapes, Sheet Piling, and Bars for Structural Use²

G 101 Guide for Estimating the Atmospheric Corrosion Resistance of Low-Alloy Steels³

3. General Requirements for Delivery

3.1 Material furnished under this specification shall conform to the requirements of the current edition of Specification A 6/A 6M, for the ordered material, unless a conflict exists in which case this specification shall prevail.

4. Process

4.1 The steel shall be made by one of the following processes: open-hearth, basic-oxygen, or electric-furnace.

4.2 The steel shall be made to fine grain practice.

5. Chemical Requirements

5.1 The heat analysis shall conform to the requirements prescribed in Table 1.

5.2 The steel shall conform on product analysis to the requirements prescribed in Table 1, subject to the product analysis tolerances in Specification A 6/A 6M.

5.3 When required, the manufacturer shall supply evidence of corrosion resistance satisfactory to the purchaser. The basis for this evidence may be a corrosion index calculated on the basis of the chemical composition of the steel, as described in Guide G 101.

NOTE 2—The user is cautioned that the Guide G 101 predictive equation for calculation of an atmospheric corrosion resistance index has only been verified for the composition limits stated in that guide.

6. Tensile Requirements

6.1 The material as represented by the test specimens shall conform to the requirements for tensile properties prescribed in Table 2.

² Annual Book of ASTM Standards, Vol 01.04.

³ Annual Book of ASTM Standards, Vol 03.02.

TABLE 1 Chemical Requirements (Heat Analysis)

Element	Composition, %			
	Grade A	Grade B	Grade C	Grade K
Carbon	0.19 max	0.20 max	0.15 max	0.17 max
Manganese	0.80-1.25	0.75-1.35	0.80-1.35	0.50-1.20
Phosphorus	0.04 max	0.04 max	0.04 max	0.04 max
Sulfur	0.05 max	0.05 max	0.05 max	0.05 max
Silicon	0.30-0.65	0.15-0.50	0.15-0.40	0.25-0.50
Nickel	0.40 max	0.50 max	0.25-0.50	0.40 max
Chromium	0.40-0.65	0.40-0.70	0.30-0.50	0.40-0.70
Molybdenum	...	...	...	0.10 max
Copper	0.25-0.40	0.20-0.40	0.20-0.50	0.30-0.50
Vanadium	0.02-0.10	0.01-0.10	0.01-0.10	...
Columbium	...	...	...	0.005-0.05 ^A

^A For plates under 1/2 in. in thickness, the minimum columbium is waived.

TABLE 2 Tensile Requirements^A

	Plates and Bars			Structural Shapes
	For Thick- nesses 4 in. and Under [100 mm]	For Thick- nesses Over 4 in. to 5 in. incl [100 to 125 mm]	For Thick- nesses Over 5 in. to 8 in. incl [125 to 200 mm]	All Groups ^B
Tensile strength, min. ksi [MPa]	70 [485]	67 [460]	63 [435]	70 [485]
Yield point, min. ksi [MPa]	50 [345]	46 [315]	42 [290]	50 [345]
Elongation in 8 in. [200 mm], min. %	18 ^{C,D}	...	...	18 ^D
Elongation in 2 in. [50 mm], min. %	21 ^{C,D}	21 ^{C,D}	21 ^{C,D}	21 ^E

^A See specimen Orientation under the Tension Tests section of Specification A 6/A 6M.

^B See Specification A 6/A 6M.

^C Elongation not required to be determined for floor plate.

^D For plates wider than 24 in. (600 mm), the elongation requirement is reduced two percentage points. See elongation requirement adjustments in the Tension Tests section of Specification A 6/A 6M.

^E For wide flange shapes over 426 lb/ft (634 kg/m) elongation in 2 in. [50 mm] of 18 % minimum applies.

SUPPLEMENTARY REQUIREMENTS

Standardized supplementary requirements for use at the option of the purchaser are listed in Specification A 6/A 6M. Those that are considered suitable for use with this specification are listed by title:

- S2. Product Analysis,
- S3. Simulated Post-Weld Heat Treatment of Mechanical Test Coupons,
- S5. Charpy V-Notch Impact Test,
- S6. Drop Weight Test,

- S8. Ultrasonic Examination,
- S14. Bend Test,
- S15. Reduction of Area, and
- S18. Maximum Tensile Strength.

The American Society for Testing and Materials takes no position respecting the validity of any patent rights asserted in connection with any item mentioned in this standard. Users of this standard are expressly advised that determination of the validity of any such patent rights, and the risk of infringement of such rights, are entirely their own responsibility.

This standard is subject to revision at any time by the responsible technical committee and must be reviewed every five years and if not revised, either reapproved or withdrawn. Your comments are invited either for revision of this standard or for additional standards and should be addressed to ASTM Headquarters. Your comments will receive careful consideration at a meeting of the responsible technical committee, which you may attend. If you feel that your comments have not received a fair hearing you should make your views known to the ASTM Committee on Standards, 1916 Race St., Philadelphia, PA 19103.

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Standard Specification for Steel, Sheet and Strip, High-Strength, Low-Alloy, Hot-Rolled and Cold-Rolled, with Improved Atmospheric Corrosion Resistance¹

This standard is issued under the fixed designation A 606; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

This specification has been approved for use by agencies of the Department of Defense. Consult the DoD Index of Specifications and Standards for the specific year of issue which has been adopted by the Department of Defense.

^{e1}NOTE—Section 11 was added editorially in November 1993.

1. Scope

1.1 This specification covers high-strength, low-alloy, hot- and cold-rolled sheet and strip in cut lengths or coils, intended for use in structural and miscellaneous purposes, where savings in weight or added durability are important. These steels have enhanced atmospheric corrosion resistance and are supplied in two types: Type 2 contains 0.20 minimum copper based on cast or heat analysis (0.18 minimum Cu for product check). Type 4 provides a level of corrosion resistance substantially better than that of carbon steels with or without copper addition (Note 1). When properly exposed to the atmosphere, this steel can be used bare (unpainted) for many applications.

NOTE 1—For methods of establishing the atmospheric corrosion resistance of low-alloy steels, see Guide G 101.

1.2 The values stated in inch-pound units are to be regarded as the standard.

2. Referenced Documents

2.1 ASTM Standards:

A 109 Specification for Steel, Strip, Carbon, Cold-Rolled²
A 568/A 568M Specification for Steel, Sheet, Carbon, and High-Strength, Low-Alloy, Hot-Rolled and Cold-Rolled, General Requirements for²

A 749/A 749M Specification for General Requirements for Steel, Carbon and High-Strength, Low-Alloy, Hot-Rolled Strip²

G 101 Guide for Estimating the Atmospheric Corrosion Resistance of Low-Alloy Steels³

3. General Requirements for Delivery

3.1 Material furnished under this specification shall conform to the applicable requirements of the current edition of Specification A 568/A 568M and the dimensional tolerance

tables of Specification A 109, unless otherwise provided herein.

4. Ordering Information

4.1 Orders for material under this specification shall include the following information, as required, to describe adequately the desired material:

4.1.1 ASTM specification number and date of issue, and type,

4.1.2 Name of material (high-strength low-alloy hot-rolled sheet or strip or high-strength low-alloy cold-rolled sheet or strip),

4.1.3 Condition (specify oiled or dry, as required),

4.1.4 Edges (must be specified for hot-rolled sheet or strip) (see 8.1),

4.1.5 Finish—Cold-rolled only (indicate exposed (E) or unexposed (U). Matte (dull) finish will be supplied unless otherwise specified),

4.1.6 Dimensions (thickness, width, and whether cut lengths or coils),

4.1.7 Coil size (must include inside diameter, outside diameter, and maximum weight),

4.1.8 Application (show part identification and description),

4.1.9 Special requirements (if required), and

4.1.10 Cast or heat (formerly ladle) analysis and mechanical properties report (if required) (see 10.1).

NOTE 2—A typical ordering description is as follows: "ASTM A 606-XX, Type 4 high-strength low-alloy hot-rolled sheet, dry, mill edge 0.106 by 48 by 96 in. for truck frame side members."

5. Materials and Manufacture

5.1 *Condition*—The material shall be furnished hot-rolled or cold-rolled as specified on the purchase order.

5.2 *Heat Treatment*—Unless otherwise specified, hot-rolled shall be furnished as rolled. When hot-rolled annealed or hot-rolled normalized material is required, it shall be specified on the purchase order.

6. Chemical Composition

6.1 The maximum limits of carbon, manganese, and sulfur shall be as prescribed in Table 1, unless otherwise agreed upon between the manufacturer and the purchaser.

¹ This specification is under the jurisdiction of ASTM Committee A-1 on Steel, Stainless Steel and Related Alloys, and is the direct responsibility of Subcommittee A01.19 on Steel Sheet and Strip.

Current edition approved Oct. 21, 1991. Published December 1991. Originally published as A 606 - 70. Last previous edition A 606 - 91.

² Annual Book of ASTM Standards, Vol 01.03.

³ Annual Book of ASTM Standards, Vol 03.02.

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TABLE 1 Chemical Requirements

	Composition, max. %	
	Cast or Heat (Formerly Ladle) Analysis	Product Check, or Verification Analysis
Carbon ^A	0.22	0.28
Manganese	1.25	1.30
Sulfur	0.04	0.06

^A For compositions with a maximum carbon content of 0.15 % on heat or cast analysis, the maximum limit for manganese on heat or cast analysis may be increased to 1.40 % (with product analysis limits of 0.19 % carbon and 1.45 % manganese).

6.2 The manufacturer shall use such alloying elements, combined with the carbon, manganese, and sulfur within the limits prescribed in Table 1 to satisfy the mechanical properties prescribed in Tables 2 or 3. Such elements shall be included and reported in the specified heat or cast analysis. These steels have enhanced atmospheric corrosion resistance and are supplied in two types: The basis for this data may be a corrosion index calculated on the basis of the chemical composition of the steel in accordance with Guide G 101. When requested, the producer of the steel shall supply acceptable data of corrosion resistance to the purchaser.

6.3 When the steel is used in welded applications, welding procedure shall be suitable for the steel chemistry as described in 6.2 and the intended service.

7. Mechanical Property Requirements

7.1 Tension Tests

7.1.1 *Requirements*—Material as represented by the test specimen shall conform to the tensile requirements specified in Table 2 (hot rolled material) or in Table 3 (cold rolled material).

7.1.2 *Number of Tests*—Two tensile tests shall be made from each heat or from each lot of 50 tons (45 Mg). When the amount of finished material from a heat or lot is less than 50 tons, one test shall be made. When material rolled from one heat differs 0.050 in. (1.27 mm) or more in thickness, one tensile test shall be made from the thickest and thinnest material regardless of the weight represented.

7.1.3 Location and Orientation:

7.1.3.1 Tensile test specimens shall be taken at a point immediately adjacent to the material to be qualified.

7.1.3.2 Tensile test samples shall be taken from the full thickness of the sheet as rolled.

7.1.3.3 Tensile test specimens shall be taken from a location approximately halfway between the center of the sheet and the edge of the material as-rolled.

TABLE 2 Tensile Requirements for Hot-Rolled Material

	As-Rolled		Annealed or Normalized Cut Lengths and Coils
	Cut Lengths	Coils ^A	
Tensile strength, min. ksi (MPa)	70 (480)	65 (450)	65 (450)
Yield strength, min. ksi (MPa)	50 (340)	45 (310)	45 (310)
Elongation in 2 in. or 50 mm, min. %	22	22	22

^A Coiled sheet and strip shall be produced and released to the same strength level as cut length product. Due to the producer's inability to test within the body of the coil, the strength levels are shown as being reduced by 5 ksi (35 MPa) to reflect the possibility of the inclusions of some lower strength material.

7.1.3.4 Tensile test specimens shall be taken with the axis of the test specimen parallel to the rolling direction (longitudinal test).

7.1.4 *Test Method*—Yield strength shall be determined by either the 0.2 % offset method or by the 0.5 % extension under load method unless otherwise specified.

7.2 Bending Properties:

7.2.1 The minimum forming radius (radii) that steel covered by this specification can be expected to sustain is listed in the Appendix and is discussed in more detail in Specifications A 568/A 568M and A 749/A 749M. Where tighter bend radii are required, where curved or offset bends are involved, or where stretching or drawing are also a consideration, the producers should be consulted.

8. Workmanship, Finish, and Appearance

8.1 Edges:

8.1.1 *Hot-Rolled*—In the as-rolled condition the material has mill edges. Pickled or blast-cleaned material has cut edges. When required, as-rolled material may be specified to have cut edges. If mill edge material is required it must be specified.

8.1.2 *Cold-Rolled*—Cold-rolled material shall have cut edges only.

8.2 Oiling:

8.2.1 *Hot-Rolled*—Unless otherwise specified, hot-rolled as-rolled material shall be furnished dry, and hot-rolled pickled or blast-cleaned material shall be furnished oiled. When required, pickled or blast-cleaned material may be specified to be furnished dry, and as-rolled material may be specified to be furnished oiled.

8.2.2 *Cold-Rolled*—Unless otherwise specified, cold-rolled material shall be oiled. When required, cold-rolled material may be specified to be furnished dry, but is not recommended due to the increased possibility of rusting.

8.3 Surface Finish:

8.3.1 *Hot-Rolled*—Unless otherwise specified, hot-rolled material shall have an as-rolled, not pickled surface finish. When required, material may be specified to be pickled or blast-cleaned.

8.3.2 *Cold-Rolled*—Unless otherwise specified, cold-rolled material shall have a matte (dull) finish.

9. Retests

9.1 If the results on an original tensile specimen are within 2 ksi (14 MPa) of the required tensile strength, within 1 ksi (7 MPa) of the required yield strength, or within 2 % of the required elongation, a retest shall be permitted for which one random specimen from the heat or test lot shall be used. If the results on this retest specimen meet the specified requirements, the heat or test lot will be accepted.

10. Certification

10.1 When requested, the manufacturer shall furnish

TABLE 3 Tensile Requirements for Cold-Rolled Material

	Cut Lengths and Coils
Tensile strength, min. ksi (MPa)	85 (450)
Yield strength, min. ksi (MPa)	45 (310)
Elongation in 2 in. or 50 mm, min. %	22 ^A

^A 0.0448 in. (1.14 mm) and under in thickness—20 %.

copies of a test report showing the results of the heat or cast analysis and mechanical property tests made to determine compliance with this specification. The report shall include the purchase order number, the ASTM designation number, and the heat or lot number correlating the test results with the material represented.

11. Keywords

11.1 alloy steel sheet; alloy steel strip; cold rolled steel sheet; cold rolled steel strip; high strength low alloy steel; hot rolled steel sheet; hot rolled steel strip; steel sheet; steel strip

APPENDIX

(Nonmandatory Information)

X1. BENDING PROPERTIES

TABLE X1.1 Suggested Minimum Inside Radius for Cold Bending^a

NOTE 1—(t) equals a radius equivalent to the steel thickness.

NOTE 2—The suggested radii should be used as minimums for 90° bends in actual shop practice.

Grade	Minimum Inside Radius for Cold Bending
Hot Rolled or Cold Rolled	$2\frac{1}{2}t$

^a Material which does not perform satisfactorily, when fabricated in accordance with the above requirements, may be subject to rejection pending negotiation with the steel supplier.

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